

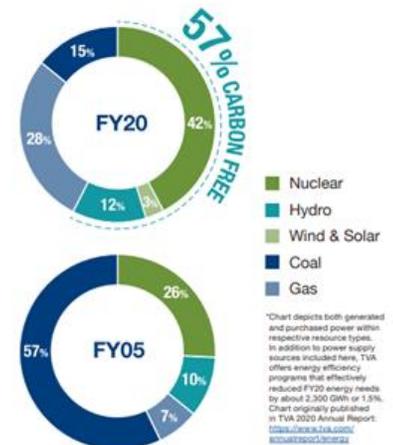
FAQs About Electricity in Nashville

This document is an introductory resource for the Nashville community explaining the relationships between the Tennessee Valley Authority (TVA), Nashville Electric Service (NES), Metro Nashville government, and the Nashville community.

How is my electricity made?

As of FY20, electricity in our region is generated from the following sources¹:

- 42% nuclear generation
- 28% natural gas
- 15% coal
- 12% hydro
- 3% wind and solar



Who makes the electricity?

The [Tennessee Valley Authority \(TVA\)](#) is a not-for-profit, federally owned corporation. It was formed in 1933 to provide navigation, flood control, electricity generation, and economic development to the Tennessee Valley region. TVA is governed by a nine-member [Board of Directors](#) nominated by the President of the United States and confirmed by the Senate.

57% of the electricity provided to the region is carbon free. TVA is the nation's largest public power provider, generating power to serve most of Tennessee and parts of six surrounding states. It sells electricity to 153 local power companies (LPCs), who then distribute this electricity to individual customers. Nashville's LPC is [Nashville Electric Service \(NES\)](#).

Who provides electricity to my home, business, school, place of worship, etc.?

NES is a municipally owned, not-for-profit public power provider. Their mission is to provide safe, reliable and cost-efficient power to all customers.

Today, NES purchases their electricity from [TVA](#) and distributes it to Nashville and the surrounding community.

NES has provided electric services throughout Middle Tennessee since 1939 and is governed by an [Electric Power Board](#) comprised of five members appointed by the Mayor of Nashville/Davidson County.

What is NES's service area?

[NES's](#) service area covers all of Davidson County, and portions of 6 surrounding counties, for a total of 700 square miles. NES distributes power to nearly 420,000 customers. The NES system is comprised of 5,900 miles of distribution and transmission lines.

¹ https://tva-azr-eastus-cdn-ep-tvawcm-prd.azureedge.net/cdn-tvawcm/docs/default-source/environment/carbon-report7c1594b6-a33a-4430-9a9a-cbb873c75ab5.pdf?sfvrsn=937fc95_3

How are rates for my electricity service determined?

NES purchases power from TVA pursuant to a contract. This contract contains provisions that establish wholesale rates, retail rates and terms and conditions under which power is to be purchased, resold, and distributed to customers. NES's retail resale rates are subject to TVA's review and approval and are designed to allow NES to operate in a safe, reliable, and cost-effective manner. Adjustments to these rates occur periodically.

How does the city work with NES?

The [NES board of directors](#) is comprised of five individuals, who are appointed by the Nashville Mayor and confirmed by the Metro Council for 5-year terms. NES is a quasi-governmental agency, with policy decisions made by the NES leadership and the board of directors.

NES and Metro Nashville operations, activities and interests intersect in a number of areas and staff from both agencies regularly connect on topics including but not limited to:

- Energy efficiency, renewable energy and carbon emissions reduction
- Infrastructure investments and maintenance
- Building and transportation electrification
- Utility coordination issues
- Fiscal responsibility, affordability, and efficiency in operations
- Transparency and accountability to Nashville, its residents, and organizations

What is the environmental impact of electricity consumed by Nashville/Davidson County?

One way to think about how our local electricity use affects the environment is by considering its output emissions rate. This is the amount of carbon dioxide (the most prevalent greenhouse gas) produced per megawatt hour of electricity produced. The *lower* the rate the *better* for the environment.

The output emissions rate in 2020 was 562 lb CO₂/MWh of electricity for the TVA region. The national average output emissions rate in 2020 884 lb CO₂/MWh².

In addition to the characteristics of electricity produced and provided to Nashville/Davidson County, consumption and use of electricity is equally important.

In 2017, 11,430,751 metric tons of CO₂e emissions were produced in Nashville/Davidson County across all sectors and emissions sources, which amounts to 16.54 metric tons per person. In 2017, approximately 35% of total CO₂e emissions or 3,999,087 metric tons were produced *by electrical generation in Nashville/Davidson County*, which amounts to 5.79 metric tons per person.

TVA has achieved a 63% reduction in mass carbon emissions since 2005 and has set the goal to achieve 70% reduction by 2030, has a path to ~80% by 2035, and an aspiration to achieve net-zero carbon emissions by 2050.

Other pollutants from energy generation such as sulfur dioxide and nitrogen oxide also influence the health of Tennesseans. Although TVA has achieved over 97% reductions in SO₂ and NO_x levels from

² <https://www.tva.com/environment/environmental-stewardship/air-quality/carbon-dioxide#:~:text=TVA's%202020%20system%20average%20CO,from%20owned%20and%20purchased%20power.>

historic peaks, there was still 19,000 metric tons of SO₂ and 10,000 metric tons of NO_x emitted in 2020 in Tennessee.

How are TVA, Metro Nashville Government and NES taking advantage of renewable energy and energy efficiency to ensure the City's access to clean, reliable, and affordable electricity?

In June 2019, Metro Council unanimously passed three ordinances known as Metro Nashville's "Green New Deal." These ordinances establish:

- A renewable portfolio standard requiring municipal operations to be 100% renewable-powered by 2041.
- Stronger building standards requiring at least LEED Gold certification in the Urban Services District and at least LEED Silver in the General Services District for municipal buildings, plus retrofits to increase energy efficiency.
- A fleet electrification standard requiring that all non-emergency Metro vehicles be zero emission by 2050.

Additionally, in January 2022, Metro Nashville formally adopted a greenhouse gas emissions target of an 80% reduction in community and municipal operations from 2014 levels by 2050.

To help meet these ambitious goals, Metro Nashville Government has implemented a number of actions, several of which have been undertaken in partnership with NES and TVA:

[Green Invest](#) is a program available to LPCs and business and industry customers across TVA's service territory. The program leverages long-term agreements to build new, large-scale renewable energy installations in the Valley through a competitive bid process. [Metro Nashville](#) was the first local government to sign a Green Invest contract in the TVA territory, committing to 100 MW of solar in partnership with NES, TVA and Vanderbilt University. Metro's commitment is part of a 200 MW project in Middle Tennessee that is expected to be online in early 2024. The clean energy from this project will power Metro's buildings across the city and will help meet interim goals for renewable power established in ordinance.

Metro Department of General Services has constructed 28 LEED certified buildings since 2010, resulting in large-scale energy and water savings. For 20 of these high-performance buildings in 2017-2019, General Services avoided energy costs of over \$1,775,000 compared to non-LEED comparable buildings. This equates to 60,376,534 kBTU. These buildings saved a total of 30,461,318 gallons of water during the same period.

In 2021, General Services was approved for \$2,000,000 to seed an Energy Savings Revolving Fund. This innovative initiative – one of the only ones in the Southeast – allows strategic investments to elevate the efficiency of existing buildings. First projects are LED lighting upgrades at existing fire stations. The savings accrued will return to the Revolving Fund, allowing for continuing upgrades across Metro facilities.

General Services operates 12 buildings with solar for a total of 2,062 panels generating approximately 870,000 kWh annually. This is the clean air equivalent of taking over 1.5 million vehicle miles off our roads. Metro Water Services operates 280 kW of solar and is constructing 4 MW at three sites. They are also designing and planning for an additional 2.7 MW at other locations.

In preparation for a sharply increasing number of electric vehicles, General Services has installed an extensive network of electric vehicle (EV) chargers. Throughout Davidson County on Metro properties there are 72 electric vehicle charging ports in 25 locations; 56 of these ports are free and available for public use. Since 2017, our network of EV chargers has saved 267,312 pounds of CO₂e from entering the atmosphere. In 2020, Rocky Mountain Institute awarded Nashville the top spot for EV charging preparedness in the Southeast. Additionally, the Division's 13 electric vehicles, which are utilized by more than 20 Metro departments for official business on a shared basis, have averted over 35 metric tons of CO₂e from our air since 2017.

In 2022, Metro is also undertaking a solar feasibility assessment across its property portfolio to determine where solar may be well suited for installation.

NES offers options for customers to go renewable and help the planet. [Music City Solar](#) community array allows customers to purchase subscriptions to solar panels. [Green Switch](#) allows customers to purchase blocks of 100% solar energy – sourced from the Tennessee Valley. With [Power of Change](#), an opt-out round up to the next dollar program, customer contributions are provided to the Home Uplift program, providing weatherization and energy efficiency upgrades to residential customers who need it most.

TVA takes several actions to reduce environmental impacts associated with its generation of electricity and offers programming that allows LPCs and consumers to do the same. Some of these steps include but are not limited to:

- [TVA is working to further reduce carbon emission with a goal of a 70% reduction from 2005 levels by 2030, and an aspiration to achieve net-zero carbon by 2050.](#)
- Reducing greenhouse gas emissions by reducing dependence on coal-fired power plants and pursuing energy generation through cleaner resources. TVA has already retired or announced the retirement of 60% of the coal generating fleet and is evaluating to retire the remainder by 2035.
- Offering programs to customers that promote [energy efficiency](#), [renewable energy](#), [electric vehicle adoption](#), and other [innovative and sustainability activities](#)
- Investing in renewable energy solutions; TVA plans to add about 10,000 MW of solar by 2035.
- Supporting smart grid technologies and infrastructure.

Interested in learning how you can live more sustainably at home? Visit [Socket](#), Nashville's Sustainability Outlet and NES's [Energy Saving Tips](#) or [Manage My Energy Tools](#).